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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NAGPAUL, JYOTI

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,533

Applicant(s)

PROSSER ET AL.

Examiner

Jyoti Nagpaul

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 19-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-18 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☒ Claim(s) 1-24 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/26/02, 5/09/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-18, drawn to microfluidic chip devices, classified in class 422, subclass 68.1.
 - II. Claims 19-24, drawn to method for using a microchip device in an autosampler, classified in class 422, subclass 100.

Inventions apparatus of I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to practice another and materially different process such as an electrostatic coating process.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Joseph Noto on October 13, 2004 a provisional election was made with preservation of right to traverse the invention of group I, claims 1-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Interpretation

With respect to **Claims 1-18**, the applicant does not claim any element of the electrospray delivery probe. The applicant recites a "fluid delivery probe" which can read on any fluid delivery probe in any automated liquid analyzer. Therefore it is unclear and indefinite to the examiner as to what the electrospray chip holder is. In this case, the "electrospray chip holder" can read on any liquid accepting device such as microtiter plates or test tube holders because there are no limitations on an electrospray delivery probe.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 18** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant recites "assembler control unit in communication with the autosampler". It is unclear and indefinite as what the assembler unit is for in regards to the invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1 and 7-8** are rejected under 35 U.S.C. 102(b) as being anticipated by Mandle.

Mandle discloses a system for automatically processing liquids. With respect to **Claim 1**, Mandle discloses a “**fluid delivery probe**”/dispensing head (92) being movable between a sample source and an “**electrospray chip holder**”/card (32) and comprising at least one fluid dispensing head which accepts sample from the source and discharges sample to “**chip**”/test tubes (34) in the “**chip holder**” (32). Mandle further discloses an alignment system which aligns the probe with the “**chip holder**” and the “**chip holder**” with a detector. (See Figures 3 and 7) (Col 4, lines 58-64) With respect to **Claim 8**, Mandle discloses a reusable tip. (Col. 6, lines 54-58) The applicant does not describe any element of an electrospray device in Claim 1, thus the electrospray device can read on any fluid delivery probe in any automated liquid analyzer. Therefore, the “**chip holder**” can also read on any liquid accepting device such as test tube holder and microtiter plate holder. With respect to **Claim 8**, Mandle discloses a reusable tip. (Col. 6, lines 54-58)

6. **Claims 1,3-5,8 and 16-17** are rejected under 35 U.S.C. 102(b) as being anticipated by Karger US Patent 5,872,010 (herein referred to **010**).

7. ('010) discloses a microscale fluid handling system. ('010) discloses sample transfer may be by droplet, spray or stream (Col. 1, Lines 60-63). ('010) further discloses an electrospray chip holder/transitional stage that comprises of at least one fluid delivery probe that accepts sample from the source and discharges sample to a chip (10) in the chip holder/transitional stage. ('010) further discloses an alignment system that aligns the probe with the chip holder and the chip holder with a detector/mass spectrometer. (Col. 3, Lines 39-42) ('010) further discloses the chip is fabricated with a thin film of gold to apply voltage. (Col. 7, Line 33) ('010) further discloses an electrospray chip comprising of plurality of electrospray devices, each generating one or multiple of electrospray plumes when activated. (See Figure 4)(Col. 8, Lines 13-15)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Karger US Patent 5,872,010 (herein referred to **010**) in view of Karger US Patent 6,068,749(herein referred to **749**).

('010) fails to disclose a fluid delivery probe comprising a capillary tube sample container. However, ('749) discloses an ESI-MS system combined with a microseparation technique, such as capillary electrochromatography or microcolumn liquid chromatography. (Col. 1, Lines 41-46) Thus it would have been obvious to one having ordinary skill in the art to modify the device of 010 to include a capillary tube sample container or larger internal diameter sample container in order to perform fast analyses and improved precision and reliable results.

12. **Claims 2 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over 010 in view of Mann.

010 fails to disclose a voltage probe. However, Mann discloses a liquid transfer device for an analysis apparatus. The device includes an inner and outer tube, which

are electrically connected to each other. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of '010 to include a voltage probe in order to facilitate enablement, control and steering of sample droplets.

13. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over ('010) in view of Ludden.

('010) fails to disclose a plurality of individual conducting pads on the back of the chip. However, Ludden discloses a microchip with conductive pads. (See figure 1) Thus it would have to one having ordinary skill in the art at the time the invention was made to modify the device of ('010) such that individual conducting pads applied on the back of the chip to apply voltage in order to avoid or minimize cross-contamination between wells.

14. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over ('010) in view of Shumate.

15. ('010) fails to disclose a seal on the fluid delivery probe. However, Shumate discloses a liquid handling system comprising of a probe with a seal. (Abstract) Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of ('010) such that the fluid delivery probe further comprises a seal in order to prevent leakage of sample and cross-contamination between wells.

Allowable Subject Matter

16. **Claims 9-11** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to **Claim 9**, prior art does not teach, or fairly suggest the chip holder provides electrospray voltage to the substrate of the chip through the chip mount.


With respect to **Claim 10**, prior art does not teach, or fairly suggest the chip holder provides voltage or ground potential to the substrate of the chip.

With respect to **Claim 11**, prior art does not teach, or fairly suggest the fluid delivery probe provides electrospray voltage to the fluid.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Jill Warden
Supervisory Patent Examiner
Technology Center 1700

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN